

It is noted that a substitute specification has been required with regard to the changes included in the Preliminary Amendment of August 18, 1999. Accordingly, a substitute specification is presently being prepared and will be filed, in the USPTO, shortly.

An objection was raised of the drawings, under 37 CFR §1.83(a), as detailed in Item 3, on page 3, of the Office Action. Concerning the objection directed to the expression "relative deviation amount," in claim 12, this has been rendered moot with the canceling of that claim. Claim 12 was canceled, however, without prejudice or disclaimer of the subject matter covered thereby. Regarding the featured aspect directed to the "air vent," as recited in dependent claims 6 and 8, it is specifically described, for example, on page 29, lines 1-4, of the specification, as it relates to the example embodiment(s). Although it is not specifically shown in the drawings, it is, however, specifically detailed in the specification, as just noted, to allow one of ordinary skill to apply the same into a particular example embodiment. In this connection, it is noted that the description on page 29, lines 1-4, thereof, relates to an example embodiment covered by the presently elected species. Accordingly, since such an air vent is provided (inherently) for purposes of relieving the cavity of air components or bubbles, a specific showing of the same, it is submitted, is clearly unnecessary.

Regarding the objection under item 3(c), concerning

the expression "a passage," in claim 5, this was intended to relate to the seal resin injection port such as described on page 28, lines 24-25, of the specification (e.g., see seal resin injection port 1a2 of the tape base 1a in Fig. 8). In consideration of this, the phrase "a passage" in line 2 of claim 5 has been accordingly amended to read instead as a seal resin injection port, consistent with the related description in the specification relating that particular featured aspect to an example embodiment in the drawings. Therefore, in view of the discussion above and in conjunction with the above-made amendments, reconsideration and withdrawal of the standing objection under item 3, on page 3 of the Office Action, is respectfully requested.

In view of the canceling of claim 12, the previously standing rejection thereof under 35 USC §112, first paragraph, as detailed under item 5, bridging pages 3-4, of the Office Action, has been rendered moot.

In view of the clarifying discussion hereinabove regarding the featured aspect directed to the "air vent", as recited in claims 6 and 8, as well as the amendment made to claim 5, the rejection of claims 5-7, under 35 USC §112, second paragraph, is accordingly traversed and reconsideration and withdrawal of the same is respectfully requested.

According to the Office Action, claims 1, 2 and 4 stand rejected under 35 CFR §102(b) as anticipated by Haghiri-Tehrani, et al (USP 4,829,666); claims 5-8, 11,

12 and 14, "insofar as in compliance with 35 USC §112," stand rejected under 35 USC §103(a) in view of Haghiri-Tehrani et al, *supra*; claims 9 and 13 stand rejected under 35 USC §103(a) over Haghiri-Tehrani et al in view of Nakamura (USP 5,729,051); and claims 5-8, "insofar as in compliance with 35 USC §112," stand rejected under 35 USC §103(a) over the combined teachings of Haghiri-Tehrani et al in view of Ueda et al (USP 5,196,917). It will be shown, hereinbelow, the invention according to base claim 1 and further according to the named corresponding dependent claims thereof not only could not have been disclosed by Haghiri-Tehrani et al but, moreover, could not have been suggested therefrom, even if combined in the manner as that suggested in the related art rejections. Therefore, insofar as presently applicable, these rejections are accordingly traversed and reconsideration and withdrawal of the same is respectfully requested. Incidentally, regarding the art rejection of claim 12, this, of course, has been rendered moot with the canceling of that claim.

The invention according to base claim 1 and, therefore, also according to the dependent claims thereof, was amended for purposes of more clearly defining the featured aspects thereof including in terms of highlighting the patentable differences of the present invention even over the teachings of the references, as applied in the standing art rejections. In this connection, it is a featured aspect of the present

invention that the semiconductor chip has a back (rear) surface defined by a spin-etching technique so as to achieve a semiconductor chip which is thinner than that of the tape carrier. According to the invention in base claim 1, as now amended, and also according to the corresponding dependent claims thereof, since the semiconductor chip is made thinner than the tape carrier and is provided with a smooth back surface (resulting from the spin-etching technique), the semiconductor device that is achieved, which is sealed with resin material, has "an anti-crackable structure with enhanced robustness against any bending stress applied thereto." (Page 32, lines 1-9, of the present specification.)

Haghiri-Tehrani et al, on the other hand, disclosed a carrier element (e.g., 1) for a semiconductor chip whose thickness is greater than or at least equal to the thickness of the semiconductor chip plus the thickness of the contacted connection leads (see column 2, lines 5-9, of Haghiri-Tehrani et al). It is submitted, Haghiri-Tehrani et al neither disclosed nor suggested the concept of applying the thinned semiconductor chip to a device having a tape carrier structure such that there is achieved a semiconductor device having a thin structure and one in which the chip offers an "anti-crackable structure" which is able to withstand any bending stress applied thereto, such as is effected according to the schemed invention of base claim 1 and, also, even more particularly, according to the dependent claims thereof.

It is emphasized, the thinning of the semiconductor chip, through the application of spin-etching technique on the back surface, in accordance with the present invention, and the thickening of the tape carrier according to Haghiri-Tehrani et al's teachings, for the purpose of accommodating the semiconductor chip, are, clearly, different from each other. Therefore, a device according to claim 1+ could not have been achieved in view of Haghiri-Tehrani et al's teachings, even if combined with the teachings of Nakamura and Ueda et al. This is because a device according to Haghiri-Tehrani et al's teachings would not have achieved a device with a thinner tape carrier structure as that presently called for in base claim 1, and further according to the corresponding dependent claims thereof.

Both Nakamura and Ueda et al also failed to disclose or suggest the above-technical concept of claim 1, as now amended. Therefore, even if, arguendo, one of ordinary skill would have attempted to combine the teachings of Nakamura and Ueda et al into Haghiri-Tehrani et al's disclosure, the present invention would still not have been achievable.

Regarding the use of process limitations in product claims, applicants respectfully note the teachings set forth in the case of *In Re Luck*, 177 USPQ 523 that:

"As for the method of application, it is well established that product claims may include process steps to wholly or partially define the claimed product... to the extent these process limitations distinguish the product

over the prior art, they must be given the same consideration as traditional product characteristics."

Regarding this, applicants, through their undersigned representative, respectfully note that a featured aspect defining the semiconductor device is employing of the spin-etching technique in the manner as that presently recited for the purpose of effecting a thinning of the structure and thereby a thinning of the tape carrier structure. Accordingly, in as much as this specific claimed feature of the product is now included in the claims, as well as other featured aspects that are included in one or more of the dependent claims, it is respectfully submitted that the method limitation(s) set forth therein must also be given weight. That is, applicants respectfully request that reconsideration be given of the overall combination of the featured structural aspects directed to applicants improved semiconductor device, defined in base claim 1 and further according to the dependent claims thereof. Therefore, in view of the above-made amendments and related discussion herein, it is clearly apparent that applicants' invention not only could not have been anticipated by Haghiri-Tehrani et al, but, moreover, could not have been rendered obvious in the manner as cited in the rejections.

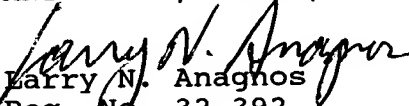
Therefore, in view of the amendments presented hereinabove together with these accompanying remarks, reconsideration as well as a favorable action therefor

upon all of the presently pending claims and an early formal notification of allowability of the above-identified application are respectfully requested.

A marked-up copy of the revisions being made is included herewith as Attachment A, and is entitled **"Version With Markings to Show Changes Made"**

To the extent necessary, applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, Dep. Acct. No. 01-2135 (501.37120X00), and please credit any excess fees to such deposit account.

Respectfully submitted,  
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